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ABSTRACT

This report translates the basic principles of behavior modification and presents methods which can provide viable teaching alternatives. Emphasis is placed on the basic principles of behavior modification, solution to preschool and elementary problems, and common problems in behavior modification. The case studies presented are intended to be used as models for the classroom teacher for specific problems. The appendix includes a list of possible incentives and suggested readings. (MJM)

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VOL. VI, NO. 2 JULY, 1972

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PREFACE

Since maintaining orderly behavior within the classroom has traditionally been a major problem for teachers, many studies have been conducted focusing on this area of concern. Research in the area of applied behavior analysis has demonstrated that procedures based on systematic principles of reinforcement can be effective in maintaining classroom discipline; therefore, studies were made in the Atlanta Public School System to determine whether a minimum of disruption should give improved academic performance. The results have indicated that there was no facilitation of academic achievement despite the elimination of classroom disruption; however, it was found that by focusing on academic performance, the disruptive behavior was drastically reduced.

The Teacher's Primer of Behavior Modification Techniques is the result of a three-year study in the Atlanta Public School System, in which the curriculum and instructional methods were analyzed with the view of giving the teachers a primer or handbook. The studies, on which this handbook was based, were funded under the Elementary and Secondary Education Act of 1965 (ESEA), Title I, and subcontracted to The Center for Applied Research, Georgia State University. The primer should be especially helpful for those persons who are not familiar with the principles and their applications.

This primer is by no means all inclusive. Some of the basic ideas are presented; however, more specific information can be found in previous reports including "Behavior Modification in A Seventh Grade Classroom," Research and Development Report, Volume V, Number 6, October, 1971 and "A Nine-Month Token Reinforcement Program for the Trainable Retarded," Research and Development Report, Volume VI, Number 1, 1972.

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TABLE OF CONTENTS

	Page
INTRODUCTION	1
SOME BASIC PRINCIPLES OF BEHAVIOR MODIFICATION	
A Behavioral Model for Change	2
General Procedure	
Specify the Final Performance the Teacher Wants	3
Determine the Baseline Level	4
Structure a Favorable Situation	5
Establish Reinforcers for the Children	6
Shape the Desired Behavior	8
Use Schedules of Reinforcement	9
Build Stimulus Control Trhough Fading	10
Keep Continuous Objective Records	11
Graphing	12
Modeling	13
Response Inhibition Techniques	15
A Cautionary Note	16
SUGGESTED SOLUTIONS TO PRESCHOOL PROBLEMS	17
How to Reduce Expended Classroom Time	18
How to Manage Classroom Disruption	20
How to Steady "Up and Down" Performance	24
An Easy and Efficient Way to Teach Complex Concepts	26
How to Get the Most out of Your Incentives	28
A Non-Tangible Incentive Based on Social Reinforcement	30
The Child Is Always Right!	32
Incentives for Fast Work	33
How to Begin	35
SUGGESTED SOLUTIONS TO ELEMENTARY SCHOOL PROBLEMS	36
How to Reduce Disruption	37
How I Learned to Manage Disruption and Stopped Hating My Work	39
How to Make Behavior Modification Systems Practical	40
How to Improve Academic Performance	42
How to Grade More Work in Less Time	44
How to Use Tutors	45
HOW TO SOLVE SOME COMMON PROBLEMS IN BEHAVIOR MODIFICATION PROGRAMS	
General Steps in Problem Solving	48
Getting Teachers to Cooperate	49
Reinforcers	50
Contingencies	50
Time Limits	51
A Final Word	51

TABLE OF CONTENTS (Contd.)

Page

APPENDIX

Some Possible Incentives A-1
Suggested Readings A-2

I. INTRODUCTION

For over three years the Center for Applied Behavior Research and the Atlanta Public School System have worked closely together in the development of procedures applicable to contemporary education problems. Under the direction of Dr. T. Ayllon of Georgia State University, the Center has worked with dozens of teachers, principals, and other educators in a joint effort to produce workable systems for the classroom based upon specific principles of human behavior. The task of translating operant learning research into methods which can provide viable teaching alternatives for the educator has not been a simple one, but through the combined research-application efforts of the Center, more extensive use of these principles in the Atlanta Public School System may now be possible.

Initial applications of these operantly-based principles were conducted at the Milton Avenue School for the trainable mentally retarded. With the creative and invaluable encouragement of its principal, Paula Calhoun, great strides were made in the development of motivational techniques which were highly effective as well as easily implemented by the classroom teacher. As an outgrowth of these successes, the motivational system was utilized with a population somewhat more complex in its skills. Beginning with a single classroom and then expanding the program into four regular classes at the Jessie Mae Jones School, the same basic principles were applied and the results were parallel. At the same time, three kindergartens (at the Luckie Street, Ed S. Cook, and D. H. Stanton schools) and the Luckie Street prekindergarten were successfully utilizing these same principles to augment their curriculum. Whenever the motivational system was utilized in a fashion tailor-made for that population, the academic and management objectives of the teacher were realized more quickly and efficiently.

The development of the basic operant principles into workable techniques continues although a large body of proven interventions now exists. It is the intent of the authors to make these interventions available to all teachers and to assist them in shaping the intervention to fit the specific needs of individual classrooms. The examples presented in this booklet include a wide range of classroom concerns, from general management of time to the reduction of

disruption and increase of academic achievement. These studies are intended to be used as models for the classroom teacher for specific problems. An additional section of this booklet goes beyond the specific examples and discusses the general principles underlying all of the interventions. This section may be helpful to lead teachers who are confronted with a wide variety of problems from many classrooms, possible solutions which may not be found in the examples.

The remaining portions of the booklet will be arranged as follows. First, a discussion of the general principles will be presented followed by examples of interventions on the kindergarten level. The next section will give examples of possible solutions to problems which occur from the first to the seventh grade level. The final section will discuss general tactics to be considered in utilizing these interventions. A list of suggested readings is also included for those who would like further information regarding the application of these techniques.

II. SOME BASIC PRINCIPLES OF BEHAVIOR MODIFICATION

When a lead teacher is asked to assist in solving a particular classroom problem, she may follow a variety of courses of action in searching for a solution. This section presents a general model for producing changes through the use of an operant conditioning or behavioral model. This model, based upon an analysis of the relationship between a behavior and the variables which control it, is present below.

A Behavioral Model for Change[1]

1. Specify the final performance the teacher wants
   a. Identify the target behavior.
   b. Determine how the behavior is to be measured.
2. Determine the baseline level.

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[1]This model has been adopted from Ellen Reese's "A Behavioral Model for Learning," The Analysis of Human Operant Behavior, Dubuque: William C. Brown Company, 1966. p. 49.

3. Structure a favorable situation.

   a. Provide discriminative stimuli for the appropriate behavior.

   b. Remove discriminative stimuli or opportunity for incompatible behavior.

4. Establish motivation for the children.

   a. Determine reinforcers for target behavior.

   b. Withhold reinforcers for incompatible behaviors.

5. Shape the desired behavior.

   a. Reinforce successive approximations of the final performance.

   b. Raise the criterion for reinforcement gradually.

   c. Present the reinforcer immediately, contingent upon the behavior.

6. Reinforce on an intermittent schedule.

7. Build stimulus control through fading.

8. Keep continuous objective records.

General Procedure

Specify the Final Performance the Teacher Wants

Before the Lead Teacher can assist a teacher with a problem, she must first find out exactly what the classroom teacher wants. The task of specifying objectives is one of the most difficult facing the classroom teacher, but it is a vital one in determining what procedures should be followed to achieve the final performance goal. Further, it allows adequate assessment of the success or failure in reaching the specified goals. If the goal is stated as "The noise in the class will be reduced," it would be very difficult to know when the noise had been reduced, but if the objective were stated as follows, in simple and descriptive terms, this assessment would be much simplified.

Objective: The children will remain in their seats during academic periods and will speak loudly enough to be heard at the teacher's desk only when called upon by the teacher.

Objective: The student will be able to read any page from the fourth-grade reading text with two errors or less on the entire page. He will read at not less than forty-five words per minute.

This procedure eliminates any confusion between the lead teacher and classroom teacher as to the goal toward which to direct their efforts. Indeed, the children may participate in the writing of objectives, but the general format and purpose remains the same.

Determine the Baseline Level

Once the terminal or goal behavior has been specified and thus determined the direction of the efforts, a baseline must be determined to let the lead teacher know at what level the children are currently functioning. If the teacher has set as her objective for the children to sit in their seats and to talk loudly only when called upon, she must know how severe the problem currently is before she can suggest an appropriate intervention. Without baseline measures, it will be very difficult to determine whether or not whatever procedures are implemented result in change. One way to measure the severity of the problem is to simply count the number of disruptive occurrences (talking out or out of seat, for example) during the time that the teacher complains of the problem. This would give the lead teacher a frequency of disruptive events and might provide an adequate representation of the problem. Another measurement technique consists of dividing the problem period (one hour, for example) into smaller intervals of time such as into continuous intervals of 10 seconds each. She could then record whether or not a disruptive event occurred during each 10 second interval by using a stopwatch and observing the class as a whole or in successive portions (such as row by row). At the end of the hour she would have recorded 360 intervals of 10 second duration as being either disruptive or not disruptive. She can then produce a per cent of disruption by dividing the total number of intervals (360) into the total number of disruptive intervals (for example, 270/360 = 75 per cent disruptive). This procedure is more refined than a frequency count for the intervals allow for some measure of the duration of the disruption while the frequency technique would evaluate a 2 second and a 170 second disruptive event as one disruption each.

Once the baseline rate of the problem has been established by using techniques such as these for several sessions or trials, a representative sample of the problem will have been gathered. The lead teacher may then proceed to map out the appropriate intervention. As a result of the baseline procedure for determining the degree of the problem for which the classroom teacher seeks a remedy, certain surprising facts often are discovered. One kindergarten teacher, for example, found that her disruption didn't occur throughout the day as she had sensed but rather primarily following the morning Sesame Street period. The interventions to remedy this problem would be quite different from an overall treatment for general disruption. Until the problem was pinpointed by gathering a baseline, the specificity of the disruption was not evident to either the teacher or her consultant.

Structure a Favorable Situation

Very few teachers attempt to teach math with the television set on or ask their class to read their science books with comic books on their desks. They know that if they want math learning or science reading to take place, they must structure the situation so that those behaviors are more likely to occur than the competing ones of watching T.V. or reading comics. Many teachers provide additional enrichment activities in the classroom which are designed to make experiences available to the children which they might otherwise not have. These same activities, however, when engaged in at the wrong time can severely interfere with ongoing academic activities. Basically, then, the task of engineering the classroom to produce specific learning events at the appropriate time may be a problem which is referred to a lead teacher.

If the teacher wants math learning to occur between 10:00 a.m. and 10:30 a.m., she must insure that no other stimulations from the classroom divert the children's attention from math at that time. This includes access to special games or media equipment designed for enrichment activities. Further, her task of interesting the children in math might be made easier if she utilized some external sign, signaling that math was in the spotlight for the next 30 minutes. She might put up a large math related poster which is removed at the end of the period. If the children are young, she might have a puppet which is used only during the arithmetic period. Many different signals are available which can be effective if used consistently and specifically in association with one academic subject.

Eventually, the teacher should be able to utilize these signals exclusively without coaxing or repeated instructions and the class knows that, "It's math time!" The TV is turned off, comics are in the desk, all records and books are on their shelves, and math books are out. This process is not an easy one to achieve, but if the teacher is consistent and clear in her rules, this goal is well within her reach.

Establish Reinforcers for the Children

Following the steps in the Behavioral Model for Change, the lead teacher has identified the target behavior and has taken a baseline on the problem to determine its severity. The classroom has been engineered to promote good learning and deportment, but the children are still not learning math under these ideal circumstances. The final ingredient is missing; namely, the motivation for the children to make an effort to do better in their school work. There must be some reason for them to exert their energies in the direction of academic effort. For many children, school is very discouraging, and they have failed so often that more school is hardly an attractive prospect. There is no payoff for them, no good feelings of success and achievement, no intrinsic satisfaction for a well-done academic assignment. Consequently, they don't try very hard, fail again and again, and the teacher becomes the person who is a source of negative feedback and a "punisher" to the child. But until the child begins to show at least some effort or interest in doing better, there is little for which the teacher can praise him or about which she can be positive toward him regarding his academic standing.

Operant conditioning literature is primarily based upon the scientific law that behavior is controlled by its consequences. If a behavior is followed by something unpleasant or punishing, that behavior is not likely to re-occur. On the other hand, if the consequence is a pleasant one, the behavior is more likely to take place again. Consequences which increase the likelihood of occurrence of some behavior are called reinforcers. A whole body of applied research is based upon this law and the principle is widely used in many classrooms.

Many teachers have used raisins, sweetened cereal, and other edibles in their classes for a period of time. Some found that the children would make an effort for a while and then would lose interest and cease trying so

hard for these goodies. Others would begin using the edible reinforcers for small units of behavior and would find that soon the children were earning so many goodies that they become bored with them. Satiation, or the loss of desirability of the reinforcers, occurred due to the continuous reinforcement of the behavior and an overexposure to the reinforcer. In these cases, many teachers decided to drop the reinforcement system as a failure to meet their needs and solve their problems. There is another alternative, however, which resolves both dilemmas. An effectively designed token exchange system (Ayllon and Azrin, 1968)[2] keeps the interest of the children high without satiating them on edibles or any other single reinforcer. Further, it provides the teacher with a flexible system for earning the reinforcers which prevents them from becoming dependent upon the reinforcers. The tokens are things from becoming dependent upon the reinforcers. The tokens are things such as plastic chips or points which the teacher is able to deliver immediately following some desired behavior and which the child can later exchange for any of a wide variety of backup reinforcers such as recess.

How does one initiate a token system in his classroom? The first step is to identify the potential reinforcers in the classroom which can be done in several ways. The simplest method is simply to ask the children what they would like to earn as rewards for good work. Some of these requests may be surprising to the teacher, but they reflect, nonetheless, the unique interests of that class. Many reinforcers can be identified by observing what the children do most when they are given free time in the classroom or in other areas of the school. Many classroom tasks are reinforcers for certain children -- running errancds, erasing the board, sharpening pencils, passing out papers, and so on in an endless list. Once the reinforcers are found, the token system can be introduced to the children which makes these reinforcers available. (It is critical that these events be available only through tokens for otherwise the effectiveness of the system is undermined.)

Depending upon the age of the child, the tokens are introduced in various stages of complexity. Very young children must exchange their tokens

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[2]Ayllon, T. and Azrin, N. H. The Token Economy: A Motivational System for Therapy and Rehabilitation, New York: Appleton-Century-Crofts. 1968.

immediately for some time in order for them to learn that the token is a valuable item (and not just a poker chip or painted bottle cap). Older children may learn the reinforcing characteristics of the token within one trial and afterwards can delay their exchange for several hours without losing any strength in their motivational level. In all cases, the token must be delivered immediately following the completion of a behavior which the teacher wishes to reinforce. While the actual exchange may come later in the day, the token itself must be delivered contingently in order to insure that that desirable behavior will more likely occur again than not.

Vital price and commodity information can be easily communicated by having a price sheet posted each day where the children can refer to it as needed. The items offered for token exchange should be varied from time to time to reflect the children's interest and the need for new reinforcers. In order to keep their interest high, the children need to have many kinds of items available to meet their different interests and needs at various times. Pricing of items is set very much like pricing is conducted in the economic world outside the school, as a function of available resources, demand for the item, and the general availability of cash (tokens). No items should be priced beyond the achievable limit by the hardest working child nor should it be "given away" by requiring little effort for its procurement. Rather, a balance must be achieved so that every child can earn some reinforcer if he makes an effort, but the best reinforcers are contingent upon the best effort. Further, prices should be constantly adjusted to take into account its desirability. For example, if balloons cost 5 tokens, but no one is buying them the price should be adjusted down perhaps to 3 tokens. An item that everyone is buying should perhaps be adjusted up in price.

Shape the Desired Behavior

Even with the most powerful reinforcement program complex academic behaviors must be learned in smaller units which compose the larger behavior. This same paradigm can be applied to the nonacademic, but related school behavior of good deportment. The opposite of good deportment is disruption, and the serious classroom problem must often be eliminated before effective teaching can take place. The token system can be applied to nondisruptive behavior as easily as to academic subject matter and the same principles are

followed. For example, one teacher has selected as her target behavior that the children will be nondisruptive (in their seats, no talking out, etc.) during the entire morning academic period, from 9:15 a.m. until lunch at 11:45 a.m. The lead teacher measured disruptive behavior for three days and found that the range of disruptive behaviors (in 10 second intervals as described earlier) was 77 per cent to 91 per cent. Knowing that the class was used to high levels of disruption, the teachers decided that good behavior would have to be shaped. Reinforcement was initially delivered immediately to each child if he could engage in no disruption for 10 minutes of the academic period. The children would then understand the relationship between their behavior and the consequences. The interval would be gradually extended until the target behavior of nondisruption for the full academic period is reached.

The teacher should be cautious in shaping behavior in order to avoid the problem of setting too high a goal initially. She should begin with a small component of the target behavior and gradually require additional components, successively approximating the goal. Too, reinforcement should always be immediate, whether in the form of tokens, edibles, or the social reinforcers of praise and hugs. Further, the tangible reinforcers, such as tokens, should always be paired with smiles and praise so that these may later become very powerful reinforcers in their own right.

Use Schedules of Reinforcement

When a child is reinforced after every response, he builds an expectancy for being reinforced on a continuous basis. When the reinforcement is not forthcoming for some reason, the responses weaken very rapidly and his motivation decreases. There are ways to keep interest and motivation high, however, without using a continuous reinforcment schedule (CRF). Several other schedules of reinforcement specify that only some of the behaviors emitted by the child will be reinforced while many others leading up to the reinforced response are not. These schedules allow the child to experience some periods of nonreinforcement so that his performance can endure longer and longer periods with no reinforcement for his responding.

In some schedules, the behavior is reinforced only after a fixed amount of time has passed (Fixed Interval). The behavior occurring between intervals is somewhat weaker the farther it is from the reinforcemnt delivery time, thus

resulting in a "scallop" effect as the end of the interval approaches. An example of this kind of schedule is attendance at work; very few absences occur on pay day as compared with regular work days when the employees are not reinforced with a paycheck.

Other reinforcing consequences are delivered only after a certain amount of work has been produced (Fixed Ratio). High steady rates of behavior are generated by this schedule because the individual controls the delivery of the reinforcer and not the calendar or clock. An example of this schedule is the piece-rate method of payment used in factories.

Variable schedules of reinforcement are more common in social situations where only an average time lapse or average work output results in a reinforcing consequence. The compulsive gambler's behavior may be explained in part by the variable schedule on which he is reinforced for his efforts at winning games of chance as well as the varying amounts of his winnings. Variable interval and variable ratio schedules result in higher rates of behavior over a longer period time than the fixed schedules.

Continuous reinforcement is important in strengthening a response into its final form. Intermittent reinforcement schedules, particularly the variable schedules, guard against the behaviors weakening once reinforcements are removed, by building some of the "removed reinforcement" or extinction period into the reinforcement schedule itself.

Build Stimulus Control Through Fading

Ultimately the teacher would like for the child's working behavior to be controlled by the subject matter and not by her instructions or his constant attention to the reinforcers he can earn. The lead teacher can suggest a number of ways of insuring that this control is shaped, just as the teacher academic and nonacademic behavior, by fading out the various aides which support the child's attention to the subject matter. The use of longer schedules of reinforcement so that the child can go for longer periods with extrinsic reinforcers. Further, these schedules increase the requirement for reinforcemnt until he is producing large amounts of work for a smaller and a smaller "pay-off."

The specific instructions the teacher gives can also be tapered off until the work itself "tells" the child what to do. The teacher's attention is then

reserved for assisting the child with problems and for praising good work. The teacher's presence is not the signal for work and attention but rather the subject matter itself.

Keep Continuous Objective Records

A systematic account of what is happening in the classroom is vital throughout the course of any intervention or program. Once the baseline level of a problem behavior has been determined and some intervention has been applied, how can the teacher make a judgment on the effectiveness of that intervention? By seeing its effects on the problem behavior through continued observation (using the same methods previously used for recording the baseline), she can make objective statements regarding the usefulness of the intervention. If the intervention has produced results that are not dramatic enough for the teacher (for example, disruption was reduced from a baseline of 82 per cent to 58 per cent), she has data which tells her that she had best consider another intervention or modifications to her present one. If, however, the intervention is successful (example: disruption is reduced from 82 per cent to 12 per cent), she has a system which works well for her. She can see the difference in the classroom and has objective data to validate her intuitive feeling.

Various methods might be used for recording behaviors as briefly discussed earlier. Those applicable to measuring and recording classroom events are divided into two categories, records of permanent events (written tests, written homework, and other permanent products) and observations of temporal events. The latter can be measured in several ways:

1. Event Recording -- counting of the frequency with which events occur, such as the number of outbursts of talking in the classroom. This is a simple procedure and can be done by the teacher herself, for example, keeping tally marks on the board or by wearing a golf wrist counter. A record of the time interval during which the observations were taken should be kept also.

2. Interval Recording -- dividing the total time of observation into discrete intervals of some given length and marking them as either disruptive or nondisruptive. This continuous record gives the teacher an idea of both the frequency of disruptive events and also their

duration. This method requires a person other than the teacher for recording but yields a more precise record of the behavior.

3. Time Sampling -- similar to interval recording but the observer records only at specific intervals within the time period. For example, the academic period may be divided into five-minute intervals. The observer would record only what was going on at the end of that period of time, for example, that the class was disruptive or nondisruptive. This is a much easier recording procedure than interval recording but it is still a little too demanding for the teacher herself to execute.

Various other recording techniques are available to the teacher, but some are inappropriate for the requirements of the classroom. Others are too cumbersome even for the lead teacher. It is felt that these three methods are adequate for meeting most of the needs of the classroom teacher for measurement and recording.

Once the behavior objective has been reading and the records indicate that the performing level is being maintained, one might consider reducing the frequency of observations. However, as a precautionary measure which could prevent future problems, sampling of the behavior is vital. By taking samples of the behavior from time to time, the teacher can keep a firm hand on the effectiveness of her intervention system. Subtle changes may gradually occur which she may not sense and which, if not dealt with immediately, can lead to serious problems. With samples of the achieved target behavior, the teacher can see immediately if the intervention is weakening and can strengthen it whenever necessary.

Graphing

The preceding section discussed various methods through which the teacher could measure and record various classroom behaviors. Once she has the feedback about how well the children are performing a particular behavior at any point in time, she can make a graphic representation of that data. Graphs are widely used by behavior modifies because they present a picture of the behavior being measured in an easy to understand format. The vertical line on the graph (ordinate) gives the range of magnitude of the behavior being recorded. The magnitude is most often recorded in per cent or in frequency of occurrence.

The horizontal line (abscissa) gives the sessions or times when the behavior was measured. Each point is plotted at the juncture of a session and the level of magnitude of the measured behavior. Figure 1 presents the baseline data recorded by the lead teacher on the per cent of disruption during a math period. Over the four days that the baseline was taken, disruption averaged 75 per cent. The teacher can see at a glance the magnitude of her problem.

Wehn a certain intervention is to be introduced for a problem like classroom disruption, the teacher wants to know how effective that intervention is. Since recording is continued during the intervention, she can see immediately if there is any change in the problem behavior. Figure 2 shows that once the intervention was introduced (for example, tokens earned for nondisruption) the level of disruptive behavior dropped dramatically.

Frequency records are also simple to graph. Suppose the teacher counted the number of children out of their seats under a baseline of four days and then utilized the same token intervention. Figure 3 provides one format she might utilize to summarize her data. Once the teacher has used graphing a few times she finds it a simple and effective communication and feedback device.

Modeling

Public education is increasingly called upon to instruct the child in social as well as academic behaviors which results in a greater and greater demand on the teacher's time and creative energies. Much learning is based upon imitation of a model, and new behaviors can often be readily acquired through the observation of another person engaging in that behavior. The teacher can utilize this principle to make her teaching tasks more effective and efficient by following a few basic steps which lead to the observer as well as the model engaging in the target behavior.

1. Make sure the child is paying attention. A novel stimulus might be used to insure that the child is focusing attention on the model.
2. Have the model go through very simple actions, ones which the child who is observing could easily execute.

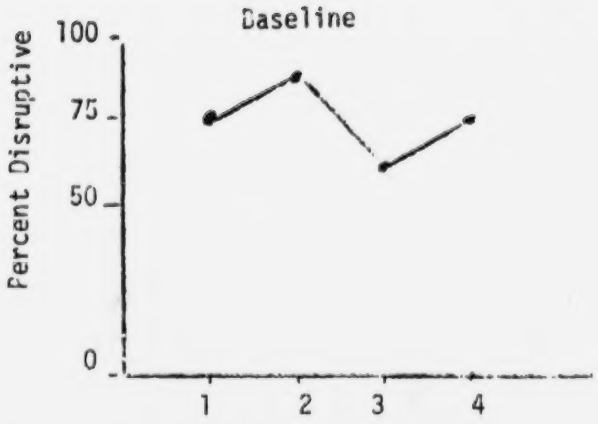

Figure 1

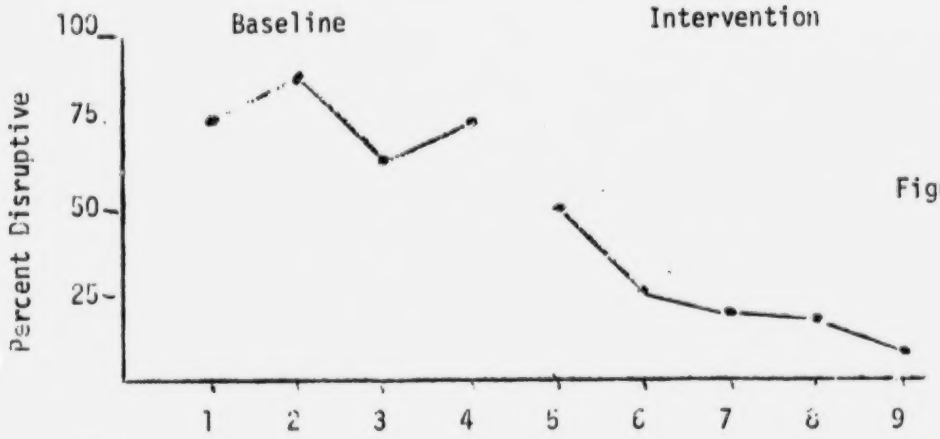

Figure 2

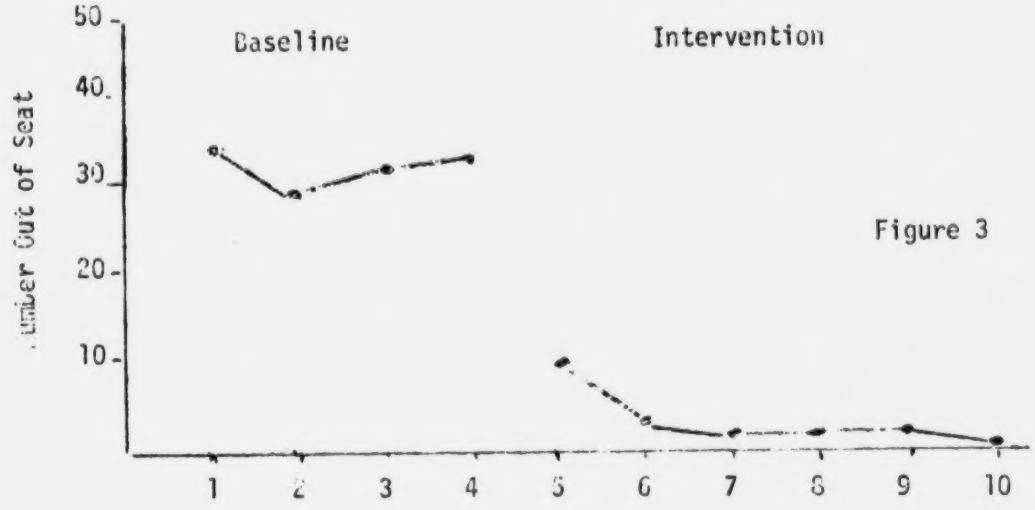

Figure 3

3. Reinforce the model. The child is more likely to perform the actions if he sees that the actions have reinforcing consequences. Reinforce the child, too, when he engages in the behavior by imitating the model.

4. Gradually fade out the reinforcers. Have the child engage in the modeled behavior whenever possible in natural situations where the reinforcers will also be natural (praise, recognition, etc.)

Like shaping, the modeling technique can be rendered ineffective by setting criteria too high for the initial responses but not administering the reinforcers immediately and contingently or perhaps because of physical or motor deficits on the part of the observer. The teacher should be alert to these potential problems and take precautions to avoid their interference in successful modeling procedures.

Response Inhibition Techniques

As suggested earlier, one way to reduce the frequency of an undesirable behavior is to remove all the stimuli associated with that behavior and introduce an incompatible behavior. The desirable behavior is reinforced while the incompatible and undesirable behavior is ignored or extinguished (not reinforced). This procedure, called positive counter-conditioning, can be a highly effective technique for eliminating unwanted behaviors.

Sometimes, however, the undesirable behavior is one which is difficult to ignore, such as a tantrumming child in a class of second graders. Adult attention is considered an effective reinforcer for most children so giving attention to a tantrumming child, even in the form of scolding, could possibly increase the frequency of tantrumming. One effective method for reducing the disturbance for the rest of the class while ignoring the undesirable behavior is to remove the tantrumming child from the scene and place him somewhere away from others who might reinforce him by their attention. Nothing needs to be said to the child, and he should be moved as swiftly as possible without superfluous attention. Some teachers use a divider screen in front of a chair in the corner of the room. Other classrooms have a lighted utility closet with material stored out of the child's reach. This time out gives the child a chance to

"cool off," and the teacher ignores all outbursts from the time-out areas. Once the child has been quiet for a period of time, one full minute for example, the teacher can ask him to rejoin the group. No discussion of the tantrum should be conducted; his experience of the consequences should be sufficient explanation of the norms of the classroom.

Another method designed to inhibit the appearance of unwanted responses in the classroom is to inroduce the mechanism of "response-cost." In this procedure a positive reinforcer is removed when an undesirable behavior appears. For example, every time a particularly active child falls out of his chair, he loses one of the tokens which he has already earned. This technique is especially helpful when ignoring and counter-conditioning have not fully resolved a particular problem. It is a highly effective consequence which the child quickly understands when "rules, praise, and ignoring" seem to be ineffective in decelerating the problem behavior.

A Cautionary Note

A brief warning is appropriate at this time for all practitioners who utilize these proven and powerful techniques. "It is well to remember that behavior modification or applied behavior analysis is amoral."[3] The teachers who will use these techniques are charged with the responsibility that their efforts will produce change in the direction they state and that change is under their control. They will be adding a powerful incentive system to a curriculum already outlined for them but now augmented as never before. Academic success and good behavior is possible for all children through an effectively administered system which rewards positive behaviors, the teacher has within her reach a new educational experience for both the children entrusted to her and for herself as a professional educator.

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[3] R. Vance Hall, Managing Behavior, III, Lawrence, Kansas: H and H Enterprises, 1971. p. 13.

III. SUGGESTED SOLUTIONS TO PRESCHOOL PROBLEMS

This section is written for kindergarten teachers in the Atlanta Public School System. It is based on the results of two projects conducted to assess the implementations of incentive programs in early childhood education. These projects are "The Prekindergarten Program Evaluation, Summer, 1971," and "Achieving Academic and Social Objectives in Kindergarten Through Behavioral Analysis, 1972."

The use of incentives, or more technically, reinforcement, is not new to early childhood education. In many cities through the country, incentive programs are being set up in kindergartens and prekindergartens often with dramatic success. As with most new techniques, there is a time lag between the latest knowledge of teaching methods and the implementation of these methods.

It is beyond the scope of this booklet to explain the evidence and theories behind the use of reinforcement. Rather, this booklet is specifically designed to be used by lead teachers and kindergarten teachers to augment their own methods of teaching.

Many students in this day and age are unmotivated to learn. Most children would rather stay at home and when forced to go to school, will either not pay attention or will disturb the whole class through disruptive behaviors. It does no good especially at the kindergarten level to try to explain the importance of learning. However, there is a technique available which motivates children to learn and which makes the educational experience a happy one for both student and teacher. This technique is called reinforcement and is based upon the fact that making a desired outcome the product of a less enjoyable behavior, the less enjoyable behavior will occur more frequently.

The use of reinforcement is not actually one technique but encompasses many techniques. However, all of these techniques are based on several common points. These points will be introduced in the following eight stories which are based on actual experiences by kindergarten teachers in the Atlanta Public School System. (The names of the teachers in these stories are completely fictitious.) Following these eight stories will be a summary of the basic steps towards setting up an incentive program to fit your own needs and your own problems.

How to Speed Up the Speedracers
or
How to Reduce Expended Classroom Time

Ms. Fowler and her aide, Ms. Ware, decided to divide their kindergarten class into two groups, the "Speedracers" and the "Roadrunners." Every morning right after Sesame Street, Ms. Fowler would take the "Speedracers" and work with them on a programmed pre-reader while Ms. Ware would work with the "Roadrunners" on colors and shapes. After 20 minutes the groups would change places, and the "Speedracers" would work with Ms. Ware while the "Roadrunners" worked on the programmed pre-reader with Ms. Fowler. Ms. Fowler and Ms. Ware felt that this schedule would maximize their teaching effectiveness.

After this schedule had been in progress a short time, Ms. Fowler became concerned about the amount of time being wasted in getting the children from one activity to another. Being the sharp teacher that she was, Ms. Fowler realized that her first step in solving her problem was to pinpoint the behavior she was interested in changing. She decided to define this behavior as the number of people seated in their seat one minute after a change in activity was announced. She defined her goal or target behavior (that is, conditions she would like to have) as having all children seated in their seat by one minute.

The next day Ms. Fowler decided to see exactly how far she was from her goal. After Sesame Street she made the usual announcement. "Speedracers will go to the back of the room with Ms. Ware, and the 'Roadrunners' will go over to the the tables with me." Using her wristwatch, Ms. Fowler counted the number of children in their seats one minute after the announcement was made. By dividing this number by the number of children present, she realized that only 20 per cent of students were in their seat one minute after the announcement. Next time the activities were changed, when Ms. Fowler and Ms. Ware switched groups, Ms. Fowler again counted the number of children seated within one minute. This time 90 per cent of the children present were emitting the target behavior. Simply by measuring the behavior she was interested in, Ms. Fowler came to realize that her only problem concerning activity change time occurred in the morning right after Sesame Street.

The next day, Ms. Fowler decided to give the children an incentive for being in their seats within one minute of the announcement to leave Sesame Street and go to the appropriate place. She provided herself, as well as Ms. Ware, with a container of "Froot-Loops." She also brought to school a one minute timer. After Sesame Street, Ms. Fowler announced: "Speedracers will go the back of the room with Ms. Ware. 'Roadrunners' will go over to the tables with me. Everybody who is in his seat when the timer goes off will get a surprise." She then set the timer for one minute and when it rang she gave out "Froot-Loops" to those children in their seats. This time 40 per cent of the students were in their seats within one minute, twice as many as the day before.

On the following day, Ms. Fowler used the same procedure and this time all children present were in their seats by the time the timer rang.

Kindergarten teachers are often faced with problems similar to the one encountered by Ms. Fowler. These problems deal with non-academic behaviors which many children do not have when they start kindergarten. A few examples of these problems are: getting the children to line up; getting the children to complete a task, such as hanging up coats, in a reasonable length of time; getting the children to engage in a particular activity. The solution to these problems is always the same. First, define the behavior of interest in terms whereby it can be easily assessed. Ms. Fowler accomplished this by defining the behavior as the number of children seated. She could also have defined her problem in terms of time -- the length of time it takes the last child to get to his seat. Once the behavior is defined, the teacher should also have at least a rough idea of how she wants this behavior to change, that is, become more like her ideal, the target behavior. Ms. Fowler decided she wanted all her students seated within one minute of the announcement. Had she defined her problem in terms of time, her target behavior might have been to have the last child in his seat before one minute had expired.

Once the behavior has been defined, it needs to be assessed. Defining and assessing the behavior in question allows one not only to have a basis against which some new procedure can be compared but may often solve problems in itself. By merely assessing the behavior, Ms. Fowler saw where her problem really lay -- in going from a TV show to academic work and not in the other group

changes during the day. In many instances assessment itself offers a great deal of insight.

The use of "Froot-Loops" given to children for the desired behavior is known as reinforcement. This should not be confused with bribery. Reinforcement should be used only when necessary, when children will not perform a desired way without it. Reinforcement should be thought of as a short cut to learning. It speeds up the process of learning by making it more enjoyable for the child. Children do not readily see the value of certain things, for instance, getting to their seats quickly. They find many other things much more valuable at the time, such as stopping to play some toy or to wander about the room. Later in life they may see the value of getting to their seats and getting busy; however, for the time being, reinforcement can be used to temporarily give them a good reason for moving quickly and efficiently.

In order for reinforcement to be effective, it should be given as immediately as possible and the child should know exactly why it is being given. The teacher's attitude is important also. She should make the children feel proud that they have been good and deserve the reinforcer and that she personally appreciates their efforts to achieve that standard of excellence.

Get Me an Aspirin!
or
How to Manage Classroom Disruption

Many kindergarten teachers and aides are concerned with disruption in the classroom. It is very difficult to teach in a situation where the teacher does not have control of her students' attention. Following are four stories describing four ways to control disruption. These stories represent methods that were actually used in Atlanta kindergartens during the 1971-72 school year. The first three stories deal with disruption in the classroom; the fourth deals with disrutpion in a non-academic setting. Discussion will follow the four stories.

"Quiet Pierre" yelled Ms. Drew as she interrupted her lesson. "Stanley, don't hit Melanee again or I'll send you outside," she continued. It wasn't three minutes before she was again saying, "Pierre, sit still. Vanessa, get back to your seat and return the bracelet to Yolanda!"

Ms. Drew had just about had enough. She was trying to teach the children about firemen and policemen by reading stories to the children, but she could not read with all the noise and confusion. Something had to be done.

After speaking with other teachers, Ms. Drew came up with a plan. Realizing that disruption is hard to assess objectively, she decided to start right away with an incentive program. The next day Ms. Drew was ready to read about animals -- lions, tigers, and bears. Ms. Drew felt that it was important for her children to know something about these animals -- what they look like, where they live, what they eat, and so on. Before she began reading she made the following announcement. "Today I am going to read to you about lions, tigers, and bears. After I read to you, I am going to ask each of you a question about what I read. If you get the answer right, you will get to go outside to recess right away. If you don't get the answer right, you have to stay until everyone else has had a chance to answer a question and then I will give you another chance." While she was reading the story, Ms. Drew completely ignored all disruptive behavior. She realized that many children were disruptive just to get attention, and she was not going to give them that attention, even if it was in the form of scolding.

Disruption this day had dropped somewhat but was still quite high. Ms. Drew was not discouraged, however. She had been told that it takes a few days for the effects to be seen. By the fourth day of this procedure, disruption was no longer a problem for Ms. Drew. An added advantage of her procedure was that she knew that her children were learning from her reading because she was asking them questions and they were getting the answers right.

Across town from Ms. Drew was another kindergarten teacher, Ms. Luckie, who also had a problem with disruption. Ms. Luckie's main concern was disruption while she was going over the BRL[4] lesson. She had heard about the success her friend Ms. Drew had in controlling disruption so she decided to also use a system of incentives.

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[4]The Behavior Research Laboratories (BRL) have produced the Sullivan Reading program widely used in the Atlanta Public Schools. It is designed so that after the initial teacher-directed phases of the program, the child may work at his own pace.

As she went through the lesson, Ms. Luckie would ask many questions about the pictures in the BRL Pre-Reader. These questions were not asked to the class as a whole but were asked to a child individually. When a child got the answer right, she gave him a "ticket." After the lesson, the children could turn in their tickets for such goodies as raisins, sweetened dry cereal, peanuts, etc. In order to be fair and make sure everyone had an equal opportunity to earn tickets, Ms. Luckie made a list of her children's names and when she asked a child a question, she made a check by that child's name. She would not ask that child another question until everyone else had been given a chance. This way everone was asked the same number of questions.

This procedure worked very well and disruption was reduced drastically. However, once in a while Ms. Luckie noticed small outbursts of disruption, usually centered around some child who had already been asked a question, and he knew it would be some time before he would be asked again. Ms. Luckie felt that by adding another incentive to being good that she could, for the most part, eliminate even this low rate of disruption. Her strategy was this: tickets were earned the same as usual (for answering questions); however, if a child misbehaved during the BRL session, he was required to give up one of the tickets he had earned. This procedure worked very well.

In another school, Ms. Jackson was also having a disruption problem. Using methods similar to Ms. Ware and Ms. Luckie, Ms. Jackson had most of her classroom disruption under control. However, for one 30-minute period every day Ms. Jackson had troubles. This was music period which occurred every day right after lunch. Since it was not possible to ask the children questions concerning the music they heard, Ms. Jackson had to think of a different solution. After much thought and planning, Ms. Jackson came up with the following program. A kitchen timer was used to time 15-minute intervals. If anyone was disruptive during the interval, Ms. Jackson would call out their names. At the end of each 15-minute interval, when the kitchen timer ran, Ms. Jackson would pass out "tickets" to all those children whose name had not been called out. These "tickets" were exchanged at the end of the day for candy and trinkets. The children were made to understand that if their name was called out twice during a 15-minute interval that they would have to give up all the tickets they had earned so far. If they were not nice about giving up their tickets or if they

were disruptive a third time during one interval, the children were told that a letter would be sent home to their parents.

Ms. Jackson, being an experienced teacher, knew that 15 minutes was a long time for kindergarten children to sit still. Therefore, when she first started this program she used 5-minute intervals. After the children got used to sitting quietly, she stretched the interval to 10 minutes and finally to 15 minutes.

Ms. Jackson also used this program during Sesame Street, where disruption was not nearly as high because the TV show kept the children interested.

Ms. Pitts was a very good teacher. Her kindergarten children loved her, her aide loved her, the principal loved her, everybody loved her. Everybody except Ms. Cook that is. Ms. Cook was the school dietician. Most of the time she enjoyed her work. However, when Ms. Pitts' class was in the lunchroom, Ms. Cook felt like quitting. Ms. Pitt's class was very orderly in the classroom, and the children learned a lot from Ms. Pitts. However, when they came to the lunchroom, that class made up for lost time. There was always some food throwing, yellowing, running, and fighting. As sure as the day is long, some child would end up crying in the lunchroom. Ms. Cook finally decided to have a word with Ms. Pitts.

As soon as she was made aware of the problem, Ms. Pitts set about on a solution. First of all she defined disruption in the lunchroom as any of the following behaviors: (1) throwing food, (2) talking loudly, (3) getting up from table when not supposed to, and (4) fighting. She defined her goal (target behavior) as a near zero occurrence of these behaviors.

On the following day Ms. Pitts explained to her class that when they went to the lunchroom they would all be seated at the "Good Peoples Tables" (same tables as before). If anybody broke any of the "Good Peoples' Rules," they would be moved to another table. At the end of the lunch, everybody at the "Good peoples Table" would be given a surprise. People at the other table would not get anything. The "Good Peoples Rules" were: (1) do not throw food, (2) talk only to people at your own tabke, (3) do not get up except to take your tray back when you're finished, and (4) do not fight.

After three days of this procedure, disruption was reduced to a near zero occurrence. Now <u>everybody</u> loves Ms. Pitts.

Four methods of controlling disruption have been presented. These are by no means the only methods to control disruption but are described here in hopes of giving kindergarten teachers and aides ideas on how to use incentives for controlling behavior. Ms. Luckie and Ms. Drew solved their problem through reinforcement for academic responses. Appropriate academic behavior is incompatible with disruptive behavior; therefore, disruption goes down as learning goes up. In cases where academic behavior is not the issue (Ms. Jackson and Ms. Pitts), incentives can be made available for all behavior which is in keeping with effective classroom functioning, that is, non-disruptive behavior.

Ms. Drew's program did not use any tangible reinforcers but used recess as an incentive. Notice that none were deprived of recess. The worst that could happen to a child is that he may miss a few minutes of recess. The use of special activities has proven to be very successful in kindergarten.

Ms. Luckie's and Ms. Jackson's use of "tickets" has certan advantages. The exchange for incentives can be postponed until a more appropriate time, yet reinforcement can follow the behavior immediately. This is known as token reinforcement and will be discussed further under academic behaviors.

Kindergarten's Answer to Brunch
or
How to Steady "Up and Down" Performance

"And what is this last color, Jimmy?" asked Ms. Forrest. "Red." "No, this color is green. You knew five colors yesterday and today you only told me three correctly." Ms. Forrest had noticed a similar trend with the rest of the class and had kept notes on the back of their name cards. From day to day Jimmy would name from one to five colors out of ten correctly; Sally varied from at least three colors and as many as seven on her better days; Barbara had never named as many as four correctly. Ms. Forrest saw that there was a great amount of variability with some children and very little progress with the rest although her notes reflected the last few days of a two week period that she had focused upon color learning. She remembered that at home she would often give her own children a cookie or small treat when they had done something which pleased her. They would often perform the task more willingly or more frequently after that. Perhaps, she thought, she might find the same procedure helpful with her classroom children.

Ms. Forrest then began giving a raisin or a piece of sweetened cereal to each child for every color he named correctly. After two days the number of correctly named colors began to stabilize and then steadily rose to a perfect score every day. Even Sally, who could not seem to learn more than four colors, was soon able to name eight and then ten different colors.

The children were pleased with themselves and enjoyed Ms. Forrest's praise, which she very naturally lavished upon them as their performance improved. Ms. Forrest also found that she could reduce her initial "reward system" of one raisin per correct color to one raisin for two colors and then three until finally the children could recite all ten colors and receive a raisin or sweetened cereal bit once in a while. Ms. Forrest's enthusiastic praise was all they needed to feel good about their achievement.

The teacher in this study had a problem common in the kindergarten class. Children come to school with many different problems and moods and their day-to-day performance in such areas as color recognition may reflect these ups and downs. The problem here was variability in the children's day-to-day performance, and the target or goal for the teacher was to have the children consistently name all 10 colors she presented to them. Initially, she had an intuitive sense about the variability in her class. Knowing, however, that dependence upon her memory to keep track of a classful of children would be potentially erroneous, she kept little notes of the children's day-to-day performance. Only then could she be sure that she had a problem rather than an intuition ungrounded by facts.

Once it was certain that a problem really existed; namely, the low number of colors each child could name, coupled with great variability in particular children, then Ms. Forrest could best decide what to do about the problem. She drew upon her own experience and utilized a system which had worked for her in a similar but non-academic case. Her own natural reinforcers (praise, attention, hugs) had not been utilized much before because the children had not given Ms. Forrest opportunities to do so (by increased performance, for example). Now, by using a little assistance in the form of a treat, she could get them to work a little harder in trying to learn and then show them how pleasing their performance was to her by the treat and her praise. After gradually reducing her use of the raisins and sweetened cereal, she relied only on her attention and praise to reward the children's good efforts and still got excellent results in performance.

No, Mom, It's Not Measles, It's a Red Star
or
An Easy and Efficient Way to Teach Complex Concepts

Ms. Guice wanted her class to be able to correctly show her their left or right hand whenever she requested it. In order to see how many children already knew the difference between their own left and right hands, she would ask them at group time to all raise their left/right hand while she simply counted the number of "correct hands." Ms. Guice made this quick count two or three times a day for three days. She found that less than one-half of the children would raise the right hand correctly and even fewer would raise their left hand when it was requested. Some children raised only their right hand.

Confronted with this information Ms. Guice's first thoughts were to again use the reward techniques she had found so successful in teaching other objectives from the Curriculum Guide. So, during the next group session, Ms. Guice gave every child a raisin who correctly raised the hand she requested. After several opportunities such as this, Ms. Guice again referred to the records she had continued to keep and found that the number of children who could correctly raise the hand requested was still very low. Were the techniques she had found to be so helpful before now failing her?

Observing the children as they answered her request for the left hand, for example, Ms. Guice found that although they were interested and trying hard to respond correctly they were very confused on this complex activity. It was then that Ms. Guice decided to break this complex piece of learning into its simpler parts. Deciding to work on the left hand first, Ms. Guice realized the children would need a reminder or some external sign to trigger their recognition of "left." So she marked a red star on the back of every child's left hand with a magic marker, telling them that this was their "helper." Every time she asked for "left," she would follow her request by saying, "Now remember, the left hand was the one we put the helper mark on." The children loved the procedure and Ms. Guice was very quickly getting every child to raise his left hand when she asked for it. Until that high level was reached, however, she asked only for the left hand. When a child was correct, Ms. Guice lavished praise on him and she found that the sweet treats were unnecessary for her when the helper mark was being used.

When it appeared that the left hand was strongly in the children's repertoire, Ms. Guice could ask the children to pick up objects with their left hand, occasionally reminding them of the long since faded helper mark for "left," and the children would use the correct hand. At this point, Ms. Guice decided to re-introduce the right hand.

"Now, I am going to see if I can trick you," Ms. Guice announced with mock seriousness to her group of children the next morning. "We all know that our left hand is the one that used to have the helper mark. Raise your left hand and let me see it. That's wonderful! Now, let's see how many people can show me the other hand with no mark, their right hand." Ms. Guice counted the number of right hands raised and found that about 75 per cent of the children answered correctly, much higher than the below 50 per cent level she had initially recorded. For the next six opportunities, she asked for the left hand, which was now the stronger response, and then the right hand to insure that the transition would be smooth and as errorless as possible. Always, she gave the children lots of attention and praise when they responded correctly to her requests for either hand.

After all her careful attention to the complexity of her requests and her efforts to strengthen the individual responses of raising the left or right hands correctly, Ms. Guice could ask for either hand in any order and find that between 90 per cent and 100 per cent of her children could respond exactly as she had asked.

The teacher in this study learned from her class by their performance that the objective she had set for them to learn was too difficult for them to handle all at once. By very deliberately deciding what steps whe would follow in order to achieve the final result, she "programmed" her teaching sequence so that the children would be "shaped" into answering correctly. Her programmed teaching sequence could be outlined like this:

1. Select the goal behavior. The children will be able to raise their left or right hand when asked by the teacher; further, they will correctly use the hand named by the teacher to pick up objects around the room, open the door, and so on.
2. Break the complex behavior into its basic parts: (a) learning left hand correctly and (b) learning right hand correctly.

3. Strengthen one of those parts by whatever techniques you may decide. Ms. Guice used a helper mark, a red star made with a magic marker.

4. When the first part of the goal behavior is strong, gradually bring in the second part. Ms. Guice asked for the left hand then the right hand for several opportunities until the children were accustomed to raising their right hand correctly.

5. After the second part of the goal behavior is strong, then the two parts can be requested in any order. Ms. Guice made sure that the children knew both hands well before she began asking for them randomly.

Sick and Tired of Raisins and Cereal
or
How to Get the Most out of Your Incentives

"Ms. Morningside," shouted Ms. Wright, "please come here. These children don't seem to want to learn anymore. I've been giving them raisins and sweet cereal for every correct response to these numbers just as I did when I taught them shapes, colors, and prepositions. These incentives worked great before but with numbers they don't seem to work at all."

Ms. Morningside looked at the record sheet Ms. Wright was keeping on the students' performance. She knew exactly what her fine aide, Ms. Wright, was talking about. Being experienced in the use of these techniques, Ms. Morningside also had the solution.

"The children are getting tired of working for candy and other edibles," explained Ms. Morningside. "We can modify our procedure a little and provide many other incentives. From now on when a child gets a question correct, we will give him a 'Happy Face' which we will make out of construction paper. Throughout the day we will let the children exchange their Happy Faces for backup incentives. Some of the things some children may like to spend their Happy Faces on are being first in line, playing with a particular toy during playtime, getting a push in the swing during recess, and sitting next to the teacher at lunch. We can offer a variety of things every day, some new and some old. This way we will keep their interest in

learning. But remember, Ms. Wright, Happy Faces, just like the raisins and cereal, must be given immediately after a correct response and must be given cheerfully and proudly."

"But how will the children know the value of these Happy Faces?" asked Ms. Wright. "A very good question," continued Ms. Morningside. "Tomorrow when we start this new program, let's go through a simple exercise where everybody can earn a few Happy Faces. Then we will exchange them immedately for backup incentives. This way our children will learn the value of the Happy Faces. We can then begin using Happy Faces in our usual program as I have described."

What has been described here is known as token reinforcement. Tokens are any tangible objects which are given immediately after the desired behavior and which are exchanged later for backup incentives. Tokens have several advantages over other types of incentives. Tokens are used to bridge the delay between the desired behavior and the delivery of the incentive. Tokens allow the behavior to be reinforced at any time and allow for individual differences as to what is a true incentive by providing a wide variety to choose from.

Some of the objects which have been used as tokens in kindergarten classes are "tickets," washers, Happy Faces, poker chips, and points on a card. The number of different backup incentives possible for tokens is a function of the teacher's imagination. A few examples were presented in the story. The important thing to remember is that many backup incentives should be made available. New incentives should be made available occasionally, and those which are never used should be discarded. Backup incentives can be one time things, such as a field trip, or can be something that is always available, such as permission to go to the water fountain.

Ms. Wright's question concerning the value of tokens is an important one. Whenever tokens are first used, a "practice" session should be used where tokens are made easily available to each child and exchange for backup incentives occurs right after the tokens are earned. Once the children understand the value of the tokens, exchange can be made some time after they are earned. However, it is recommended that in kindergarten, token exchange should be done every day, with no saving of tokens for the next day.

Care Enough to Chart?
or
A Non-Tangible Incentive Based on Social Reinforcement

Ms. Hope was using a large chart to keep attendance records. Every day she would give each child present a star for him to glue next to his name on the chart. Ms. Hope noticed that her children were very interested in the chart and liked to watch their own records. She also noticed that attendance improved since she had begun using the chart.

Ms. Hope was having difficulty in teaching her children recognition of letters. She asked herself, "If the attendance chart improves attendance, I wonder if an alphabet chart would improve letter recognition?" In order to answer this question, Ms. Hope first had to assess her students' performance without the chart. She already had defined the behavior of interest as correctly naming a letter when shown the upper case symbol for that letter.

With pencil and record sheet in hand, Ms. Hope and her aide, Ms. Spring, began asking the children all 26 letters of the alphabet (presented in random order) and recording the number correct for each child. Spending only 20 minutes a day, in three days all the children had been asked their alphabet at least three times. Looking at the record sheets, Ms. Hope noticed an important fact: only three children improved from the first to the third day of record keeping. This confirmed Ms. Hope's suspicion that most of her kindergarten children were not learning their alphabet.

Then one day Ms. Hope brought to school a chart for each child. These charts were actually graphs drawn on 8-1/2" x 11" paper. The child's name appeared at the top of the graph. Along the bottom of the graph were the days of the school week. There was enough room to put two weeks on each chart. Along the side of the chart (the ordinate of the graph), starting with zero at the bottom were the numbers "0" through "26." These numbers corresponded to the number of letters responded to correctly. Over the first day of each graph, Ms. Hope had placed a mark in the spot corresponding to the child's highest previous performance. The charts were all placed on a bulletin board at the front of the classroom.

When time came for working on alphabet, Ms. Hope asked the children to get their charts. Ms. Hope and Ms. Spring then divided the class into two

groups and began asking each child individually the 26 letters of the alphabet. For every correct answer, the teachers gave the child a lot of verbal praise. Incorrect answers were corrected by the teacher (or aide) and no other comment was made. After a child was asked all 26 letters, the number correct was added up and the teacher (or aide) made a pencil mark in the appropriate place on the chart. If this performance was an improvement ofver the previous highest performance,then the teacher (or aide) gave the child a star to lick and stick on his graph over the pencil mark. If the performance was not an improvement over the previous high, then the child was not given a star. After every child was given an opportunity to perform, they replaced their charts on the bulletin board and Ms. Hope then called out the names of all the children who had earned stars that day. These children stood up and the rest of the class, including Ms. Hope and Ms. Spring, clapped for them.

Ms. Hope liked this system very much. The charts not only improved performance, but were an easy means of keeping a record of the children's performance. When the PTA had an open house and the parents came to the classroom, there was a lot of talk about the charts. The parents were very excited about seeing their children's performance.

What has been introduced here is a procedure using social reinforcement. It has been discovered that social reinforcement, when used properly, can be a very powerful incentive. The charts are not only a means through which social reinforcement is applied, but it also provides continuous feedback to the children on their past and present performance. as well as giving them information on how their performance compares with everyone else.

The social reinforcement in this example comes from many sources:

1. The teacher gives praise for each correct answer (this should be done regardless of the incentive used).
2. The teacher gives praise if performance increases.
3. The whole class gives social reinforcement by applauding those who improve.
4. The charts, being kept on public display, allow for the possibility of other indirect social reinforcement.

What's Wrong with Daren?
or
The Child Is Always Right!

"Ms. Haven, there is something wrong with Daren. He just won't do his work. Everyone else is working hard, but he just sits there."

"Don't worry, Ms. Manor," said Ms. Haven, "there is nothing wrong with Daren. If we haven't found the proper incentive for him, it is not his fault but ours. The child is always right. We must find out what is an incentive for him. Why don't you watch Daren today and see what kinds of things he does in his free time. Perhaps we can find an incentive for him that way."

That day Ms. Manor watched Daren during free time and made notes of the things he did. She noticed that he spent most of his time looking at books and magazines.

The next day a new item was added to the list of things to exchange "Happy Faces" for. This item was, of course, books. It now required two "Happy Faces" in order to look at a book during free time. Daren was made aware of this change early in the morning, but he still didn't do any work. When free time came along, he went over to the table to get a book. Ms. Manor said, "Daren, you'll have to give me two 'Happy Faces' for a book." Daren was not happy with this arrangement, and he pouted the rest of the day. However, on the following day, Daren started working and earning "Happy Faces." After several weeks of not learning anything, Daren began to catch up with his classmates. Pretty soon Daren began to enjoy working because he was learning something and was no longer the class dummy. After a while Ms. Manor was able to take "books" off the list of things to buy and Daren kept on working. Daren worked so hard that Ms. Manor bought him his own book and told him he could take it home as soon as he learned the alphabet.

All children are different. Some respond to one incentive, and others will not. In order to be a successful educator, one must find the proper incentive for one's students. Most children respond to the more usual kinds of incentives. However, once in a while one must search for a particular incentive for certain children. An easy way to do this is to watch and see what a child does in his free time. By making these things

available only after a certain amount of work is accomplished, one can find out if some item is truly an incentive or not.

Appendix A offers a list of possible incentives. This list comprises the incentives used in the 1972-73 kindergarten project referred to in the introduction.

Why Is Jimmy so Slow?
or
Incentives for Fast Work

"Come on, Jimmy, finish your work so you can get your Happy Faces." It was the same thing every day. Some children finished their work in about fifteen minutes, but others, especially Jimmy, spent about thirty minutes on the same material.

Ms. Fountain had been using incentives since the beginning of the year and was very pleased with the results. She was using a system of tokens, "Happy Faces" she called them, which were exchangeable for a variety of activities and privileges. In most cases, Ms. Fountain herself controlled the speed at which the children worked because she controlled the asking of questions or the presentation of letters, etc. However, now the children were doing written work, and were, therefore, working at their own speed. Ms. Fountain was giving the children one "Happy Face" for each correct answer.

"The trouble with Jimmy and some of the others was not that he worked too slow," thought Ms. Fountain, "but that he wasted too much time." Ms. Fountain felt that everyone in the class was capable of finishing the written assignment in fifteen minutes. This became her target behavior.

Before starting an incentive program to encourage the children to meet this target behavior, Ms. Fountain decided to assess the behavior of interest under her present conditions. She asked her aide, Ms. Rivers, to count the number of children finishing their written work in fifteen minutes. This was done for three days in order to account for any day-to-day variations. On the first two days, out of 25 students, 15 finished in 15 minutes. On the third day only 13 children finished on time.

While Ms. Rivers was keeping records on time spent, Ms. Fountain kept records on the per cent of correctness in her children's work. With this information on hand (amount of time and per cent of correctness), a comparison could be made between the old incentive program and a new incentive program. Ms. Fountain then set about to provide an incentive for finishing work in 15 minutes. She did this simply by making a new requirement. "From now on," Ms. Fountain explained to her children, "your workbook will be taken up when this kitchen timer buzzes. You will have 15 minutes, and you will be given "Happy Faces" only for the number of problems you get correct in 15 minutes. If you don't work fast you won't get as many "Happy Faces" as before." Ms. Fountain then set the timer and the children went to work. That day 19 children finished their work on time and earned as many "Happy Faces" as before. On the following day, all 25 children, yes, even Jimmy, finished before the buzzer sounded. The amount of accuracy did not change.

On the fourth day Ms. Fountain tried a little experiment. All the children were now finishing their work on time. On this day Ms. Fowler announced that only 10 minutes would be given on the workbooks. Much to her surprise, every child finished on time and the level of accuracy (that is, per cent correct) did not decrease. On the next day Ms. Fowler gave the children only 7 minutes to do their workbook. Although all children finished on time, the level of accuracy was not as high as before. Ms. Fountain then went back to giving the children 10 minutes and the accuracy level rose to its previous high level. She used this time interval for the rest of the year.

Children can work much faster than they normally do. By adding a requirement of working fast (that to say by making more incentives available for faster work), Ms. Fowler was able to save herself 20 valuable minutes that she could now devote to other activities. Many teachers feel that when they are using incentives that too much time is spent in letting the children enjoy their incentives. This is not at all the case. Incentives can be used to encourage the children to work faster than they normally do. In addition to the advantage of more time for other activities, an incentive program like the one described here reduces the amount of disruption because the children no longer have time to be disruptive.

When using incentives to decrease the amount of time spent on an academic task, it is imperative to keep up-to-date records on accuracy (per cent

correct, for example). One should be careful not to sacrifice accuracy for speed. By keeping good records on academic performance, one can devise a program which produces the fastest speed with the most accuracy.

The End
or
How to Begin

Before we close, let us go over the basic points to be remembered:

1. Define the behavior you want to change and at the same time decide the direction you want this behavior to go (target behavior).

2. Assess the current status of this behavior for several (2-3) days (trials, opportunities, sessions). This should be done for three important reasons: (a) to let the teacher know the current status of the behavior, (b) to let the teacher know if the behavior is improving or getting worse, and (c) to provide a basis for which to compare the effects of an incentive procedure.

3. Establish an incentive program whereby each child will be reinforced immediately whenever he approahces the teacher's target behavior.

4. Continue measuring the behavior to see if the program is effective. Allow two to three days for the children to "catch on" to the relationship between what they do and what they get for doing it.

5. If one incentive procedure doesn't work, try another. In most cases, the first incentive program, if carried out properly, will have dramatic positive results. However, this does not happen 100 per cent of the time. All children are different and we must take into account these differences. Remember, the child is always right! Past experience in using these techniques in kindergarten have

proven that it does not take long to find the proper incentive procedure for any group of children.

6. If you run into a problem you cannot find a solution for, call your behavioral consultant. He or she will be more than happy to help you.

In closing we would like to say this. Learning should, and can be an enjoyable experience. An experience, when considered a drudgery will no longer be a drudgery if it is always followed by a happy outcome. Kindergarten children are students who are having their first encounter with formal education. Let us make sure that they enjoy it as well as learn something from it.

IV. SUGGESTED SOLUTIONS TO ELEMENTARY SCHOOL PROBLEMS

This section is written primarily for teachers of regular elementary school classes. The procedures advanced in this section have been developed as a result of a two year research project sponsored by the Atlanta Public Schools.

The procedures presented in this section will sound very similar to those presented in the kindergarten section, and well, they should as the principles underlying the procedures are identical for both groups. The major differences revolve around the different levels of skill possessed by the children at the various age levels.

The primary focus of this section will involve presentation of procedures and tactics which teachers can employ to achieve certain basic goals in their classes. No detailed theoretical discussion of the principles of reinforcement or behavior modification will be attempted. Further, teachers should not hesitate to make changes or modifications in the procedures set forth in this section, as all the procedures set forth are based on one criterion: they have proven that they work. Teachers seeking to employ these procedures should bear this criterion in mind and should be constantly ready to make changes when the behavior of the children indicates that any procedures are not proving themselves effective.

The six stories that follow introduce and present various procedures and techniques that have been found to be effective in the past. Teachers who have any question or problem in implementation of the procedures should not hesitate to contact their behavioral consultant.

I Think I'll Be a Stewardess or How to Reduce Disruption

Ms. Azrin was ready to give up teaching. Her seventh grade class was unbearable; they talked, played, and fought with each other constantly. They did not pay any attention to her instructions and were very disrespectful. She found it difficult to keep them in the room, and they seemed to be constantly wandering about the halls. She had tried everything she could think of in an effort to reduce the level of disruption in her class, but nothing seemed to be effective. She had tried ignoring the bad behavior hoping that if she did not give the children any attention for their misconduct, they would stop misbehaving, but the disruption only seemed to increase when she ignored it. Ms. Azrin decided that her refusing to pay attention was not as important to the children as was the fun they were having so she tried a different tactic. She dismissed the children from her class when they were disorderly and sent them to the principal. It soon became apparent, however, that this approach was, if anything, worse than ignoring the bad behavior. The children would refuse to leave the class; they would wander about the halls unless she personally escorted them to the principal's office, and the principal simply did not have time to give her all the help she needed. Ms. Azrin had exhausted all the methods she knew for controlling disorderly behavior and was reduced to yelling at the children. Finally, in desperation she decided to try a behavior modification approach. She had 3" x 5" cards printed up with a place for the child's name, a place for the points he had earned, and a place for the points he had spent. She also prepared for herself a sheet which listed each child's name down the left hand side and a row of 20 blocks next to each child's name. The next day she brought a kitchen timer to school with her and when class began she set the timer for 20 minutes and put the time she began above the first column of blocks on the page with the

children's names. She then proceeded to place a check in that block next to each child's name whenever she had to call him down. When the first time period expired, she reset the timer and continued checking in the next column of blocks the children that she had to call down. Ms. Azrin continued this procedure throughout the day, and at the end of the day she counted the number of checks on her paper. This told her how many times she had to call children down during the day. She continued this procedure for three days in an effort to get some idea of the average number of times she had to call children down during the day. Finally on the fourth day, at 8:30 a.m. she told the children, "Today we are going to try something different. You will be able to earn points for being good. (She began passing out the point cards she had already made up.) With these points you will be able to buy many things like recess time, a 5-minute break, time to read magazines, the right to chew gum or the right to play with the games in the back of the room." Ms. Azrin then pointed out a poster she had prepared with a list of all the things the children could buy with their points and the price of each item. She continued, "Here is the way you can earn your points. I will set the timer for 20 minutes. If I do not have to call you down during that 20 minutes, you will earn your point for that period. If I do call you down, you will lose your point for that period. If I have to call you down twice during a single 20-minute period, you will lose all the points you have earned for that day up until then. If I have to call anyone down three times during one period, he will lose his card and will not get it back until he has written 'I must not misbehave while in school' 500 times. Are there any questions?" After answering all the children's questions, Ms. Azrin set the timer and took out her check sheet. During the first day, there was a lot of confusion as both the children and Ms. Azrin were getting used to the new procedures. Even with the confusion at the end of the day, Ms. Azrin could see that she only had called down children 47 times during that day whereas during the three previous days, the fewest number of children she had called down on any of the three previous days had been 116. Over the next few days the number of children called down continued to decline until it reached an average of about 10-15 children per day, a level with which Ms. Azrin was very pleased.

Maybe Being a Housewife Isn't So Bad
or
How I Learned to Manage Disruption
and Stopped Hating My Work

Ms. Skinner, who had the sixth grade next to Ms. Azrin's class, also had very severe disruption problems. Like Ms. Azrin, she had tried every technique she could think of for dealing with the disruption, and none had worked well. Consequently, she watched with great interest Ms. Azrin's new behavior modification system. After Ms. Azrin had been using her system for about two weeks, Ms. Skinner decided that since it was working so well, she would try it. She first talked with Ms. Azrin and found out exactly how the system ran, and then she began her efforts to get a baseline of how many times she called down children each day. After 4 days of this, she found that she was calling down children about 130 times per day. Next she implemented the system that Ms. Azrin was using in the seventh grade. After 5 days, she found to the surprise of both herself and Ms. Azrin that while she was having to call down fewer children each day, the reduction was not very great, only from about 130 times per day down to about 90-100 times per day. After much thought she decided that in her case the problem lay with requiring the children to write sentences whenever they were called down 3 times in one 20-minute period. The children did not write the sentences quickly and were often "off points" for two or more days. As a result, Ms. Skinner decided to change the system slightly. She held a parents meeting, which all parents were required to attend and explained the problem to the parents. She then told them that from then on for each day that their child was "good" in school, he would be given a "good behavior" letter to take home. If a child did not have his letter <u>each</u> day, it would be <u>only</u> because he had not been good in school that day. She stressed the importance of the parents asking to see their child's letter each day. She also explained that the parents could make the letters most effective by letting the children enjoy some privileges such as playing outside or watching TV whenever they earned letters, and by always withholding those privileges whenever their child had no letter.

The next day she explained the letters to the class and told them that they would lose their "good letters" anytime they were called down three times in one 20-minute period, and that this was the <u>only</u> way they could lose their letters.

Following this change in the system, Ms. Skinner was very gratified to discover that she was only having to call down children between 10 and 20 times per day, a very acceptable figure.

The two previous stories have presented two slightly different techniques for dealing with disruptive behavior. From the teachers point of view, disruption is one of the most frequent, and most painful problems, encountered in dealing with their children.

Ms. Azrin, who faced this problem to its most extreme degree, came up with some very practical solutions to dealing with the problem. First, she defined the problem for herself, the children were not behaving in class. Second, she devised a method for measuring how often they were disruptive each day. Next, she implemented a system through which the children would consistently earn points if they were good and would consistently be punished when they were disruptive. The points could be traded in later for a wide variety of backup reinforcers such as recess. Her measurements indicated that the system was proving itself very effective in achieving the goals she desired.

Ms. Skinner who tried the system developed by Ms. Azrin found some problems in implementing the system. She, however, remained very flexible and quickly came up with a solution for the difficulties she was experiencing. Once again her simple measures provided her with an invaluable and ongoing record of the progress of her system.

What Do I Do Now
or
How to Make Behavior Modification Systems Practical

After Ms. Azrin and Ms. Skinner had been using their behavior modification programs for about three weeks, they began to notice some problems in utilizing the system. For example, recess was a very popular reinforcer but not all children could buy recess every day so each day some children would want to go for recess and other children who did not have enough points. Since they were responsible for their children at all times, they had to take all the children

outside and keep those who had not "bought" recess with them on the porch. Such a procedure was difficult to implement at best, and at worst resulted in many children who had not purchased recess sneaking off to play.

In discussing this problem with each other, they came up with the idea of combining their recess times. This allowed one of them to take all the children from both classes who had earned enough points to purchase recess outside while the other one kept the children from both classes who did not want to "buy" recess, or who did not have enough points, inside. This procedure worked very well and both teachers were very pleased with the outcome.

Another problem they discovered was that often there were not enough things for the children to buy with their points, thus making their points less reinforcing than they might otherwise be. Ms. Skinner and Ms. Azrin found that while the program was still effective, it did not work as well as it had worked initially. In talking about this problem, they came to the conclusion that the children were "getting tired" of the reinforcers that were available. As a result of this discussion, they sat down with each other and devised a list of new, extra reinforcers. However, when they read this list to their children, the children did not seem excited over the new items. This upset Ms. Azrin and she said, in a moment of pique, "Well What would you like?" To her surprise, the children presented a list of items they would like to have. While many of the things requested by the children were impractical, such as mini-bikes, others such as movies and TV time were very practical. When these items were put into the program, there was an immediate improvement. The success of this procedure led Ms. Skinner and Ms. Azrin to refer to it as the "Verbal Request Rule," and they made it a regular practice to ask the children what new reinforcers they might like.

Another problem for Ms. Azrin and Ms. Skinner involved children who would earn many points on one day, and would save them until the next day. These children then had no need to earn points on that day and consequently were sometimes disruptive. The two teachers adopted two tactics in solving this problem. First, they revised upwards the prices of all reinforcers. This made everything more expensive and left the children with fewer points to save from day to day. Second, they revised their system so that the children were

not allowed to save points from day to day. This procedure started the children out fresh each morning with zero points and new point cards. As a consequence of these two procedures, the children were spending 90-100 per cent of the points they earned, and were not saving any points at all thus encouraging maximal effort each day.

With the changes and new procedures, both teachers felt that the behavior modification procedures were very effective in controlling disruptive behavior, and they were extremely pleased with the results of their work.

Ms. Azrin and Ms. Skinner were able to very quickly detect slight problems with their system because of their continuous measurement of disruption. Realizing that when any reinforcement system is experiencing problems, the first place to look is the backup reinforcers that are available quickly allowed them to make necessary changes. The verbal request rule proved itself invaluable to the teachers. It allowed them to discover potential reinforcers by merely asking the children what reinforcers they might like rather than the teachers trying to determine what things the children might like.

The critical point, though, in the teachers' discovery of problems and new procedures involved their constant measurement of the level of disruption present. The measurements taken by the teachers took very little time and effort by the teachers but were invaluable in terms of overall assessment of the effects of the program.

Well, at Least They Are Quiet or How to Improve Academic Performance

Ms. Azrin and Ms. Skinner were very pleased with the results of their behavior modification programs for controlling disruptive behavior, but after the program had been in effect for about a month, Ms. Skinner started to become somewhat uneasy. In grading the children's academic work, she noticed that they were not performing any better than they had been performing prior to the implementation of the behavior modification program. This was somewhat disconcerting for Ms. Skinner as she had always felt that if only she could get the class quiet then she could teach them more adequately. In discussing this with Ms. Azrin, she found that Ms. Azrin's class also was not

doing any better academically than they had done prior to the implementation of the behavior modification program. Ms. Azrin stated, "Well, maybe we should not expect them to do better academically, after all we were reinforcing good behavior, not academic performance. Maybe we should think about also reinforcing academic performance if we want to improve their work." Ms. Skinner liked this idea, and so the ladies set about designing a program that would reinforce both good behavior and academic performance.

After reviewing their present program for control of disruption, they decided that that part was very good and should be left as it was with a point system for correct academic performance added to it. They decided that the children should be allowed to earn points for each page of work turned in correctly and points for passing tests. Each of them decided, however, to implement their program somewhat differently. Ms. Azrin first tested all her children to find the level at which they were currently performing in both arithmetic and reading. After she had tested them, she placed each child in reading books and math books corresponding to the level at which they were working. Then she told the children: "You will have two hours each day to work on reading and math. Do as many pages as you can during the two hours. For every page you turn in that you score at least 70 per cent on, you will earn a point. When you have finished every page in a chapter, you will take a test over that chapter. If you pass the test you will earn 20 points and can then go on to the next chapter. When you finish an entire book, you will take a test over that book. If you pass that test you will earn 100 points and you will get a new book. In your other subjects, you will earn points for each assignment that you complete correctly." Ms. Azrin was very pleased with this procedure as it allowed each child to work at his own pace. She found also that the children were doing large amounts of work and were now completing most of the work correctly (scoring at least 70 per cent).

Ms. Skinner, on the other hand, did not feel her class would respond well to a nonstructured setting such as Ms. Azrin had devised for arithmetic and reading, and as a consequence of this feeling she devised a somewhat different program. She, too, tested all her children in an effort to determine the level at which they were currently functioning, but she used the test data to divide the class into four groups of roughly equal ability.

It was her feeling that she could most effectively work with groups rather than trying to devise individual programs for each child. She gave each group assignments, and they earned points for correct oral responses in reading group. Further, the children could earn points for passing the periodic tests she gave in all subjects. Like Ms. Azrin, she also found that the children once they could earn points for correct work, were passing much more of their work than they had previously passed.

Ms. Skinner and Ms. Azrin both recognized that academic success is the basic goal of school, not good behavior. They felt that once the children were quiet, that they would learn more. This did not, however, prove to be the case. The critical point is, though, that the teachers were very quickly able to recognize that the children were not learning more, even though they were quiet. This recognition came about as a consequence, once again, of the teachers' attention to the results of the children's work of measurement. They had records of the level at which the children had previously been performing, and when those records were compared to the children's present performance under the point system, it became very obvious that the children were not improving academically. This knowledge came immediately and allowed the teachers to make the necessary changes.

I'm Too Tired Tonight
or
How to Grade More Work in Less Time

The system for reinforcing academic performance had only been in effect for a couple of days when Ms. Azrin found that she was overwhelmed by the amount of work produced by her class: There was now so much work turned in that she simply could not grade all of it. Although this was certainly a novel problem and one that pleased her, she realized that she would have to come up with a solution immediately, as the children were very upset when it took her over one day to grade their work and often stopped working. Ms. Skinner too was faced with this problem but not the same degree as Ms. Azrin. Together they decided to try what they came to call the "quick grading system" for grading the children's work. This system consisted of the teacher selecting one problem from each page of work, the problem she felt was most

representive of that page and grading it. If the child got that problem correct, then he would get two points for that page;if he worked the first problem incorrectly, the teacher selected a second problem for grading. If he worked the second problem correctly, he got one point for that page. If, however, he worked the second problem incorrectly, he got no points for the page and had to rework the page. Ms. Azrin checked the accuracy of this method by comparing it with full page grading and found that there was about 95 per cent agreement between the methods. Once she started using the "quick grading technique" she found that her grading time (the amount of time spent in grading papers) was reduced by about two thirds.

There Are More of Them Than There Are of Us or How to Use Tutors

Ms. Lindsley taught the second grade in the school where Ms. Skinner and Ms. Azrin worked. She did not have a problem with disruptive behavior, but she felt that her children were not academically performing up to their ability. She had come to the conclusion that the children were not doing well simply because she did not have time to spend with them. She had divided her class into four groups, according to the children's ability, and each group had about six children in it. Ms. Lindsley felt that while the groups were necessary as she had to teach skills at different rates and levels, the groups were also the basis of her problem. She observed that while she was working with one group, the other three groups would be doing very little work, even when she assigned them training exercises. She felt that if only she could get the groups to work when she was not teaching them, the efficacy of her teaching method would be improved.

Having heard of the success Ms. Skinner and Ms. Azrin had found with behavior modification programs, Ms. Lindsley decided to talk with those two teachers and to design a program of her own. After observing the classes of both other teachers and after discussing her problem with them, Ms. Lindsley designed a program for reinforcing academic performance that was very much like the one being used in Ms. Skinner's class. Confident that success was now within her grasp, Ms. Lindsley implemented her program. She soon observed

that the children were indeed working much harder in their groups. Even when she was not with a group, the children appeared to be working almost constantly, and they were trying to finish the exercises she gave them. Unfortunately, it soon became apparent to Ms. Lindsley that no matter how hard they tried, the children simply did not have the skills necessary for successful completion of many of the exercises; what they needed were more teachers to help them grasp the concepts, as well as the point system to motivate them to try.

Since there were obviously no more teachers available and aides were in critically short supply, Ms. Lindsley began searching for substitute teachers. In talking over her problem with her husband, Ogdon, he made the statement, "You have children of such widely varying levels of ability that your class is very much like the old one room school houses." "Of course!" she excalimed, "that's it. In one room school houses, the older children helped teach the younger ones. Why can't I use my better children to help teach the less advanced ones?" Inflamed with her new idea, Ms. Lindsley could hardly wait to get to school the next day.

She took three of the children from her most advanced group and assigned one of the children to each group while she taught the fourth group. She, of course, explained to each tutor what he was to teach and how to do it. She also gave each tutor the power to give points to children who were doing well. She and the tutors shifted to a different group every 20 minutes. This allowed her to check on the skills being taught by the tutors and also allowed her to check on the progress being made by the children in each group.

After a week of using this procedure, Ms. Lindsley was ecstatic. The children in her class were now completing many more of their assignments correctly and were making much more progress than before.

At a party that weekend, Ms. Lindsley was describing her new procedures to Ms. Skinner and her husband. When Ms. Lindsley had completed her description, Ms. Skinner's husband Fred said, "That is very ingenuous, but what about the children who are doing the tutoring? How are they doing? It would not be fair to them to have them tutor if tutoring takes them away from their studies would it?"

Ms. Lindsley replied, "Oh, Fred, you don't seem to understand the principles involved. Anyway, I never allow a child to tutor more than once every other day and just to check I have been watching the work of the children who have been tutors. Their work has improved since I started using them as tutors; the tutoring helps them as much, if not more, than they help the other children. Teaching the others forces them to refine their concepts, and they are constantly reviewing those concepts when teaching. In short, I have a procedure which helps everyone."

Ms. Lindsley recognized that her problems in teaching her second graders were somewhat different from the problems of Ms. Skinner and Ms. Azrin who taught older, sixth, and seventh grade children. She knew that the older children had many academic skills, even though they might need much refinement, whereas for her second graders, the major problem was teaching them the initial skills. She was aware that it was critical that the teacher spend as much time as possible instructing the children. In searching for solutions to these problems, once again measurement was a critical factor. By having records of the performance of the children both before and after the implementation of the point system, she was able to establish that while the point system resulted in some academic improvement, it did not produce changes of the magnitude necessary. Once, however, she implemented her tutorial program, the measurements made it clear that the children were making dramatic improvement academically. The tutors were able to spend much more time with the children than Ms. Lindsley could possibly have spent alone, thus leading to improvement by the students. Recognizing her responsibility to all the children, Ms. Lindsley kept records of the effects of tutoring upon the tutors themselves and thus was able to establish that the process of tutoring was not only beneficial to the children being tutored but was extremely beneficial to the tutors as well.

V. HOW TO SOLVE SOME COMMON PROBLEMS IN BEHAVIOR MODIFICATION PROGRAMS

It is hoped that after having read this far in the booklet, the lead teacher will have a good grasp of both the basic principles of behavior modification and how these principles have been applied in certain cases. This final section will attempt to present some of the problems and difficulties one might expect in implementing a behavior modification program in a public school class. Hopefully, too, this section will offer certain basic solutions to these problems.

General Steps in Problem Solving

When faced with any problem there are several steps that must be taken in order. This procedure will allow adequate assessment of the problem and permit its solution in the shortest period of time.

First, get the teacher's opinion of the problem, not just her overall impression but specific statements. Next, define with her what the final goal will be or what she would most like to see. Third, take some baseline data, be constantly watching for improper contingencies. For example, if the problem is disruptive behavior, watch to see if the teacher pays attention to the children after they are disruptive. Perhaps the children who are behaving properly never get the teacher's attention. The successful completion of this step is critical, as what you will be doing as behavioral consultants is rearranging contingencies. The fifth step involves the actual rearranging. It may be possible to bring about the desired changes without resorting to a full scale token system, but merely by helping the teacher to alter manner and time of responding to the children. On the other hand, it may very well be necessary to devise a full scale token system. If so, you have been taught the basic techniques for discovering reinforcers, shaping and establishing proper contingencies, and you will be able to establish the system. Your continued measurements will provide you with empirical evidence of the degree of success your system is attaining. Continue to monitor the teacher's behavior closely; do not let her deliver reinforcement after improper behavior on the part of the children. It is better to stop the class and take her

outside to discuss some problem than to let her continue to reinforce some improper behavior.

Obviously, this booklet cannot, nor would it presume to, tell each lead teacher exactly how to deal with each teacher. A booklet such as this can only offer general steps and procedures into which you must fit your own unique talents, skills, and knowledge of how to best implement the procedures you feel are appropriate. We will, however, present some solutions for the most common problems you will face.

Getting Teachers to Cooperate

The first problem that most lead teachers will encounter will be simply getting a teacher to admit that she needs help. For many reasons, ranging from pride, to past censure when admitting problems, or simple extinction when requesting assistance, teachers are reluctant to request help. Obviously, too, when help is offered that a teacher has not requested, some bitterness and hostility may result. One problem, however, that teachers often are not reluctant to request assistance in dealing with is disruptive behavior. When a class is very disorderly and the teacher cannot deal with the problem, the very act of walking into the room and facing the children is immediately painful. The fact that a class is doing poorly academically, while a disturbing situation to teachers, does not create the constant irritation that a disorderly class provokes. Consequently, in dealing with any teacher who has a problem with disruption which you can help remediate, you can easily prove both yourself and your techniques. It is better then, in many cases, to help a teacher reduce disruptive behavior before proceeding to try and increase academic performance. This allows the teacher to become accustomed to administering a point system in rather simplified form while allowing her to see the usefulness of behavior modification in a manner that is most rewarding.

Once disruption is reduced, the lead teacher should, if the data warrants it, be prepared to immediately implement a program for facilitation of academic performance. Records of the children's academic performance will permit the lead teacher and the classroom teacher to make an objective decision as to whether or not an academic system is warranted and if so how to best implement

it. Referral to the success other behavior modification programs have had in achieving very large academic gains will also prove helpful.

Reinforcers

One problem you will encounter time and time again will involve teachers who will try to reinforcement program for a few days and will then tell you "Behavior Modification just does not work." Most often, this problem is caused by one of two misunderstandings. First, it may be that the teacher has not made the relationship between the desired behavior, the tokens, and the backup reinforcer adequately clear to the children. This problem can easily be remedied by: (1) having posters and signs put up which announce the price of each backup reinforcer and the manner in which tokens can be earned; (2) having the teacher allow the children for a short period of time, like one hour, immediately exchange their tokens after they have earned them; and (3) having the teacher verbally remind the children several times each day of the available reinforcers and the manner in which tokens are earned.

The second problem which leads teachers to feel that behavior modification does not work involves the type and/or amount of backup reinforcers that are available. No matter how wonderful certain items may seem, unless the children find them desirable and will work to gain them, they are not reinforcers. Unless the behavior of the children changes when candy is made contingent, it will do no good to have $500 worth of candy available each day. The only way to really determine whether or not this is truly the problem is to go and watch the behavior of the children. If they lose their tokens and/or constantly have many tokens left over at the end of each day, obviously the backup reinforcers which the tokens will buy have very little value. The solution to this problem obviously involves finding new items or activities to serve as potential reinforcers. The two major avenues for this involve (1) watching what the children do when they have free time and (2) asking the children what things they would like. The critical nature of reinforcers cannot be overstressed: they are the heart of any behavior modification program and without adequate reinforcers your program will fail.

Contingencies

If the relationship between behavior, tokens, and backup reinforcers has been properly established, and the reinforcers appear strong, and yet the

program still is not working well, then you should look very closely at the contingencies in effect. Perhaps the teacher is deliverying the tokens at improper times and consequently reinforcing other behaviors. The only way to determine whether or not this is in fact the case is to observe the teacher when she is implementing the program.

Time Limits

Many teachers will be concerned about how long they will have to use the system, quite naturally feeling that it is an artificial crutch which should be disposed of as soon as possible. Answering such questions is always difficult, but the most effective answers point out that what any formal reinforcement program, such as a point system, is attempting to do, is allow the children to make pairings between the tokens and more "natural" reinforcers such as praise. If the tokens are faded out gradually, the children will come under the control of the other, "natural," reinforcers, such as intrinsic ones.

It is also effective to point out that a formal reinforcement program makes the teachers' words much more effective as her instructions tell the children how to earn tokens. Consequently, the children are reinforced for "paying attention to what the teacher says," and this behavior will be emitted more frequently in the future.

A Final Word

Hopefully, you are now prepared to "go forth and create much change." The children you are dealing with do not want to fail or be thrown out of school, but they have never learned the proper ways to respond to the demands of the classroom. They can, however, be taught the proper way to respond. We now have the tools with which we can motivate and help them and our moral obligation to these children demands that we use these tools. Remember when you are having problems, return to the basics. What are the reinforcers? What are the contingencies? And good luck!

APPENDIX

SOME POSSIBLE INCENTIVES

Edibles

- Cereal ("Froot-Loops," "Sugar Pops," etc.)
- Bubble Gum (made available at the teacher's discretion)
- Candy Corn
- Raisins
- Candy (any small wrapped candy)

Trinkets

- Whistles
- Dolls
- Bracelets
- Balloons
- Marbles
- Rings
- Toy Watches

Articles for "Rent"

- Games
- Balls
- Gloves
- Bats
- Jump ropes
- Books and magazines
- "Police" badge
- Coloring books
- Hot wheels track

Special Activities

- Field trips
- Permission to go to water fountain and/or bathroom
- Extra recess time
- Run errands for teacher
- Get pushes in swing
- Sit at special table at lunch
- Films
- Television
- Being first in line for lunch, recess, etc.
- Erase board
- Be class "captain"

SUGGESTED READINGS

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